



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/614,565	07/07/2003	Shunpei Yamazaki	0553-0371	6630

7590 10/05/2005

COOK, ALEX, McFARRON, MANZO,  
CUMMINGS & MEHLER, LTD.  
Suite 2850  
200 West Adams St.  
Chicago, IL 60606

EXAMINER

WILLIAMS, JOSEPH L

ART UNIT PAPER NUMBER

2879

DATE MAILED: 10/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

H-9

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/614,565	YAMAZAKI ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Joseph L. Williams	2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 08 July 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-41 is/are pending in the application.
- 4a) Of the above claim(s) 1-11 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 12-41 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>7/7/03</u>  | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Priority***

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Specification***

2. The abstract of the disclosure is objected to because of the use of legalese language (i.e. "comprises"). Correction is required. See MPEP § 608.01(b).

### ***Election/Restrictions***

3. Applicant's election without traverse of Group II in the reply filed on 08 July 2005 is acknowledged.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 12 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Park (US 6,211,538) in view of Thompson et al. (US 6,245,393) and Postupack (US 4,138,284).

Regarding claims 12 and 27, Park ('538) teaches in figure 5A and in the corresponding columns a method of producing a light-emitting device comprising the steps of: forming a light-emitting film on an electrode; forming a conductive film on the light-emitting film by a sputtering method; and forming an insulating film on the conductive film by a sputtering method.

Park ('538) does not disclose using an ink jet method or the light-emitting film forming step, the conductive film forming step and the insulating film forming step are carried out while holding a substrate having the electrode in a manner that an angle subtended by a surface of the substrate and the direction of gravity is within a range of from 0 to 30°.

Further regarding claims 12 and 27, Thompson ('393) teaches using an ink jet method for applying the light-emitting layer for the purpose of reducing the manufacturing cost of the display.

Thompson ('393) does not disclose the light-emitting film forming step, the conductive film forming step and the insulating film forming step are carried out while holding a substrate having the electrode in a manner that an angle subtended by a surface of the substrate and the direction of gravity is within a range of from 0 to 30°.

Further regarding claims 12 and 27, Postupack ('284) teaches forming layers on a substrate are carried out while holding a substrate having the electrode in a manner that an angle subtended by a surface of the substrate and the direction of gravity is within a range of from 0 to 30° for the purpose of improving the adhesion of the material to the substrate.

Art Unit: 2879

Hence it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the ink jet method of Thompson and the film application of Postupack with the EL manufacturing method of Park for the purpose of reducing the cost of the display and to improve the adhesion of the film layers.

Claims 13, 14, 16, 17, 20, 21, 24, 25, 28, 29, 31, 32, 35, 36, 39, and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Park (US 6,211,538) in view of Postupack (US 4,138,284).

Regarding claims 13, 14, 28, and 29, Park ('538) teaches in figure 5A and in the corresponding columns a method of producing a light-emitting device comprising the steps of: forming a light-emitting film on an electrode by a printing or spray method; forming a conductive film on the light-emitting film by a sputtering method; and forming an insulating film on the conductive film by a sputtering method.

Park ('538) does not disclose using an ink jet method or the light-emitting film forming step, the conductive film forming step and the insulating film forming step are carried out while holding a substrate having the electrode in a manner that an angle subtended by a surface of the substrate and the direction of gravity is within a range of from 0 to 30°.

Further regarding claims 13, 14, 28, and 29, Postupack ('284) teaches forming layers on a substrate are carried out while holding a substrate having the electrode in a

Art Unit: 2879

manner that an angle subtended by a surface of the substrate and the direction of gravity is within a range of from 0 to 30° for the purpose of improving the adhesion of the material to the substrate.

Hence it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the film application of Postupack with the EL manufacturing method of Park for the purpose of improving the adhesion of the film layers to the substrate.

Regarding claims 16, 17, 20, 21, 24, 25, 31, 32, 35, 36, 39, and 40, Park ('538) teaches the conductive film is indium tin oxide.

Claims 15, 18, 19, 22, 23, 26, 30, 33, 34, 37, 38, 39, and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Park (US 6,211,538) in view of Postupack (US 4,138,284), as applied to claims 13, 14, 16, 17, 20, 21, 24, 25, 28, 29, 31, 32, 35, 36, 39, and 40 above, and in further view of Arai (US 6,369,507).

Regarding claims 15, 19, 23, 30, and 38 Park ('538) in view of Postupack ('284) discloses all of the claimed limitations except for claim 12, wherein the light-emitting film comprises at least one layer selected from the group consisting of a hole injection layer, a hole-transporting layer, a hole-blocking layer, an electron injection layer, an electron-transporting layer and an electron-blocking layer.

Further regarding claims 15, 19, 23, 30, and 38, Arai ('507) teaches an organic EL display comprised of, in part, a light-emitting film comprises at least one layer

Art Unit: 2879

selected from the group consisting of a hole injection layer, a hole-transporting layer, a hole-blocking layer, an electron injection layer, an electron-transporting layer and an electron-blocking layer for the purpose of improving the efficiency of the emitted light.

Hence it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the EL layers of Arai in the display of Park and Postupack for the purpose of improving the efficiency of the emitted light.

Regarding claims 18, 22, 26, 33, 37, and 41 Arai ('507) teaches the insulating film comprises silicon nitride.

The reason for combining is the same as for claims 15, 19, 23, 30, and 38 above.

### ***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph L. Williams whose telephone number is (571) 272-2465. The examiner can normally be reached on M-F (6:30 AM-3:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar D. Patel can be reached on (571) 272-2457. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2879

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Joseph L. Williams  
Primary Examiner  
Art Unit 2879